MARKED-UP VERSION OF THE CLAIMS AND SPECIFICATION

In the Brief Description of the Drawings:

Figure 1 is a schematic of[shows] a typical prior art industrial turbine, combined cycle power generation facility.

In the Claims:

5. (Amended) The method[system] of claim 11[1], wherein said aeroderivative turbines are used to produce electricity[power] until said industrial turbines are producing adequate electrical[power] output, at which time the aeroderivative turbines are[may] be shut down.

6. (Amended) The method[system] of claim 11[1], wherein the power generation system includes one or more HRSGs, wherein the aeroderivative[industrial] turbine is [optionally] left on-line in said third stage and is used to keep one or more[all the] HRSGs in a state of hot stand by for enhanced system start/stop cycling duty capabilities.

7. (Amended) The method[system] of claim 5[3], wherein the aeroderivative gas turbine is left online and used to generate electricity when additional electrical output is required in the third stage[keep said heat recovery steam generator in a state of hot stand by for enhanced system start/stop cycling duty capabilities].

In the Summary of the Invention:

The present invention relates to a system and facility for generating alternating current electric power in which a hybrid, combined cycle power generation facility is provided, including at least one industrial gas turbine, and at least one aeroderivative gas turbine. Such a facility results in lower costs of construction and capital expense and lower costs of production as compared to a combined cycle facility using only aeroderivative turbines. Similarly, the

present invention results in a facility that has faster and lower cost start/stop capabilities and better part load fuel efficiencies than combined facilities using only industrial turbines.

In the Specification:

As shown in Figs. 1and 2, a typical power generation facility may include an industrial turbine 10, a first electric generator 12, a heat recovery boiler or steam generator 14, [and] a steam turbine 16, and a second electric generator 18. [or] Alternatively, such a system may include [an] aeroderivative turbine 20, an HRSG 14, [and] a steam turbine 16 and a second electic generator 18. Each facility has certain, previously enumerated advantages and disadvantages, however, the present invention includes many of the advantages and overcomes many of the disadvantages of the prior art systems.

Fig. 3 shows a schematic of a system 30 of the present invention. While those skilled in the are will understand that any number of turbines can be utilized, a first industrial gas turbine 31 is provided for turning or driving a first generator 32. The IG turbine 31 may be any suitable turbine, but is preferably General Electric Frame 7 EA or Frame 7 F. A fuel system 34 provides the IG turbine 31 with a suitable fuel for combustion, such as natural gas or refined oil products. The exhaust gas from the IG turbine 31 is [are] fed via suitable conduit or duct to a first HRSG unit 36.

A second, aeroderivative turbine 40 is provided for turning or driving a second generator 42. Again, it is the combination of an aeroderivative turbine 40 with an industrial turbine 31 that is unique and those skilled in the art will understand that any number of turbines can be utilized. The fuel system 34 provides a suitable fuel supply for the AD turbine 46. Typically, the AD[G] turbine 40 burns natural gas or refined oil products. Exhaust gas from the AD turbine 40 is passed via suitable conduit or duct to a second HSRG unit 44. In a preferred embodiment, the AD turbine 44 is a General Electric LM6000 aeroderivative turbine.

The system 30 of the invention preferably includes at least one HRSG. In the illustrated [one] embodiment, an HRSG is provided for each gas turbine 31, 40, however, it should be

understood that multiple gas turbines may be exhausted into a single HRSG. The HRSG units convert the excess, unused energy (in the form of heat and unburned fuel) from the gas turbines 31, 40 into high pressure, high temperature steam, which may be used to drive a steam turbine 46, 48. This greatly increases the efficiency of the system 30. In a preferred embodiment, the HSRG[']s may have supplementary firing equipment installed therein. This additional equipment typically includes burners which further aid in heating and pressurizing steam for the steam turbines 46, 48. The burners may be fueled, for instance, with natural gas or refined oil products or may use other fuels such as heavy oil or coal. The use of supplementary firing equipment may increase the output of the steam turbines 46, 48 by as much as 100% and may increase the overall system 30 output by 30%. A water supply system 50 provides water to the HRSG[']s 36, 44 for the production of steam. Preferably, the water supply system provides demineralized water.

In an alternative embodiment, the HRSG[']s 36, 44 may be unfired or lack supplementary firing equipment. This may decrease capital and maintenance costs. In this configuration, the HRSG merely transfers heat from the hot turbine exhaust gas to water or steam via convective heat transfer.

The steam produced in the HRSG units 36, 44 is passed, via suitable duct or conduit, to a steam turbine 46, 48. The steam turbine 46, 48 drives or turns a third generator 52, 54. Any number of steam turbines may be used, depending, for instance, on the number of gas turbines and HRSG units in the system.

In operation, the present system 30 provides an aeroderivative turbine 40 which may be put into service or brought online in a relatively short amount of time. This allows the system 30 to generate electric power, albeit at a somewhat decreased capacity, shortly after the system is started. The exhaust from the AD turbine 40 is ducted to an HRSG 44 to begin steam production for the steam turbine 48. Since a typical steam turbine operating on steam produced in part using waste gas from an IG turbine cannot begin to operate until the IG turbine is spun up, the system 30 of the invention also permits use of the steam turbine at an earlier stage of the power